AgNews

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DDA to receive $94,000 NESARE grant for bee project

The Delaware Department of Agriculture will receive a 4 year, $94,000 grant from the Northeastern Region of the Sustainable Agriculture Research and Education Program (NESARE) for a project, "Farming for Native Bees." The project will provide farmers with information about native bee populations, and test measures to increase nesting sites, modify pesticide practices, and alter plantings on field margins to increase native pollinator populations. In addition to population monitoring, the project will develop a native bee management "how to" book and field guide. Data will be presented to the Natural Resources Conservation Service (NRCS) to facilitate refinement of existing Conservation Cover guidelines. Expected benefits include not only establishment of more sustainable cucurbit (squash, melon, pumpkin, etc.) pollinator populations, but also expanded adoption of more pollinator-friendly farm management practices.

Squash Bee

Photo: Heather Harmon

In 2006, 21 farm operations participated in a pilot study to establish a baseline of the existing native bee diversity. More than 2,500 specimens of bees were collected, representing 75 different species. Notable among them is the **Squash Bee,** (*Peponapis pruinosa*). Squash bees collect pollen and nectar only from the flowers of cucurbits (watermelon, cucumber, pumpkin). These bees are solitary and nest in underground burrows. They become active at dawn, and typically start and finish pollinating a crop before honeybees are at their most active. They have life spans of about 2 months, until the food source is gone.

Delaware Agricultural Statistics value cucurbit crops between $16 and $21 million/year. This is an important segment of the state's agricultural economy. Research has shown cucurbits to be highly dependent upon insect pollination. Honey bee colonies supply an estimated 70% of their pollination needs. *Varroa destructor* mites have largely eliminated wild populations of honey bees. Therefore, beekeeper-managed colonies have become more critical for commercial yields. However, managed colonies have been affected by Varroa mites, pesticide use, and in some states, colony collapse disorder. The net result is weaker colonies and fewer beekeepers able to supply farmers with quality pollination colonies. Native bees can be extremely efficient pollinators.

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Photo: Heather Harmon

During the 2006 pilot study, 5 new State records were established. These are bees that have never been collected and identified in Delaware. These records are now established in the American Museum of Natural History. The Halictid (*Lasioglossum vierecki*) is one of the State Records.

The "Farming for Native Bees" project team will be led by Dr. Faith Kuehn, Plant Industries Administrator. Dewey Caron, Professor of Entomology and Extension Entomologist at the University of Delaware, will serve as a technical expert for the project. Dr. Caron has more than 40 years of experience in insect pollination and is a technical advisor to the North American Pollinator Protection Campaign. The State Apiarist, Robert Mitchell, also a member of the team stated, "The information product developed from this project can be directly applied by growers to enhance pollination of fruit and vegetable crops." Dr. Sam Droege, native bee expert at the US Geological Survey in Pawtuxent Wildlife Research Center, has been assisting with bee identifications.

NESARE is the northeast branch of SARE, a USDA competitive grants program. SARE supports research and education that helps build the future economic viability of agriculture in the United States.

Electronic copies of the photographs are available from: anne.fitzgerald@state.de.us.

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